

## **CELL TRANSPORT COMPOSITIONS AND USES THEREOF**

### **Abstract**

Compositions and methods have been developed for transporting compounds across membranes with little or no toxicity and, when targeted through the appropriate routes of administration (i.e., lung, gastrointestinal (GI) tract), little or no immune stimulation. The compositions can mediate cellular delivery of compounds that would otherwise not enter cells and enhance the intracellular delivery of compounds that would otherwise enter cells inefficiently. The methods are carried out by contacting a proximal face of a lipid bilayer or membrane (e.g. the surface of an intact cell) with a complex containing a compound (e.g., a therapeutic agent) and a diketopiperazine (DKP). DKP and the compound are non-covalently associated with each other or covalently bound to each other.